Course Code	Course Title	Credits	Course Description
AMST 2300	American Culture	3	This course offers a comprehensive exploration of American culture from its origins to the present day, examining how identity, ethnicity, religion, region, gender, class, and media have shaped the nation's imagination and global image. Through literature, film, popular culture, and critical essays, students will investigate key themes such as the American Dream, immigration, race relations, religious diversity, urbanization, gender and sexuality, youth culture, freedom, and globalization.
ANTH 2110	Introduction to Cultural Anthropology	3	This course introduces students to the study of human cultures and societies across time and space. Students will explore how anthropologists investigate cultural practices, beliefs, and institutions through ethnographic fieldwork and cross-cultural comparison. Key topics include language, kinship, race, gender, economy, politics, religion, and globalization. The course emphasizes critical thinking about cultural diversity and the role of anthropology in addressing global issues such as inequality, environmental change, and health disparities.
ARTH 1050	Histories of World Art I	3	This course offers a comprehensive survey of artistic movements, architectural styles, and cultural ideas from the Paleolithic era to the Early Renaissance. Through a global lens, students will explore the evolution of art and its significance in shaping societies and civilizations. The course emphasizes critical analysis, contextual understanding, and appreciation of diverse artistic expressions across different regions and periods.
ARTH 1060	The History of Art II	3	This is an immersive and comprehensive exploration of the history of art, architecture, and intellectual thought from a global perspective, spanning the Early Renaissance to the close of the nineteenth century. This course offers students an in-depth understanding of the evolution of artistic expression, the social and cultural contexts that shaped it, and the interplay between art and broader human history. Through the course, students will embark on a captivating journey through pivotal moments in art and architecture.
ARTH 1160	History of Jazz	3	This course provides a general survey of the history of jazz from its beginnings to the present. Students will explore the historical, theoretical, and critical dimensions of jazz, coupled with hands-on experience in the creative process. The curriculum emphasizes a study of the stylistic and historical components of jazz, including an analysis of influential jazz composers and performers. The course places these elements within the broader context of cultural and artistic movements in the world.
ARTH 1225	Digital Illustration	3	This course provides a comprehensive introduction to the principles, methods, and professional practices of digital illustration. Students will explore how traditional image-making processes evolve within digital environments, gaining hands-on experience with tools such as Photoshop, pressure-sensitive drawing tablets, styluses, and mobile painting applications. Through project-based learning, students will experiment with visual styles across both static and time-based formats—including GIFs and short motion pieces—while incorporating mixed-media workflows and narrative development. Emphasis is placed on concept generation, digital craftsmanship, iterative refinement, and building a personal artistic voice. By the end of the course, students will produce a cohesive portfolio reflecting both technical proficiency and creative exploration in contemporary digital illustration.
ARTH 1350	Fashion History	3	This course provides an overview of the history of Western dress and fashion from the ancient world to the present. Students will examine how costume reflects cultural, social, economic, political, and technological changes across civilizations. The course emphasizes the interrelationship between fashion and identity, as well as the influence of historical styles on modern design.
ARTH 2080	Art and Visual Culture	3	This course explores art and visual culture as instruments of knowledge and human expression across time, place, and media. Students study major artistic forms (painting, drawing, sculpture, design, digital media), survey key periods in art history from the ancient world to the present, and examine thematic issues such as identity, spirituality, power, and the environment. The course emphasizes visual literacy, critical thinking, and contextual analysis.
ARTH 2230	Greek Mythology	3	The course explores the fascinating world of Greek myths, including the stories of mighty gods, heroic mortals, and terrifying monsters. In the course, students will learn these stories primarily through ancient Greek literary texts translated into English covering passages of Greek epic, tragedy, lyric poetry, and philosophy. Students will learn about the themes and characters of these texts by using visual art, historical events, and cultural traditions to more fully contextualize the myths within their original setting and better understand what role they played in ancient Greek society and realize the influence of Greek myths on western art and literature.
ARTH 2234	Introduction to African Literature	3	Students will analyze primary texts covering the genres of poetry, drama, fiction, and nonfiction, and will discuss them from different critical stances including historical, feminist, postcolonial, and Marxist. This course aims to introduce students to the diversity and richness of African literature, as well as the fundamental concepts and techniques of literary studies. They will demonstrate their knowledge and understanding of the works by responding to questions focusing on the works, movements, authors, themes, and motifs. The course will also focus on developing students' reading, writing, and literary analysis skills, as well as their academic communication abilities.

ARTH 2260	Introduction to Modern Art	3	This course offers an in-depth exploration of the evolution and transformation of artistic expression in the modern era, spanning roughly from the late 19th century to the mid-20th century. Students will engage with various art movements, key artists, and critical concepts that shaped the trajectory of modern art. The curriculum integrates historical context, theoretical frameworks, and critical analysis to foster a deep understanding of the diverse and revolutionarydevelopments in the art world during this period.
ARTH 2350	Ancient Greek Theatre	3	This course offers an integrated study of Ancient Greek theatre, focusing on tragedy and comedy. Through close readings of the plays, students will explore the thematic, structural, and performative elements that contributed to the success and ongoing legacy of these works. The course will also examine the historical, social, and religious contexts in which these plays were originally performed and how they continue to create meaning on stage today. Special emphasis will be placed on the cultural significance of the theatre in ancient Greek society and its influence on modern drama.
ARTH 2550	Introduction to Music Analysis	3	This course introduces students to the foundational tools, concepts, and methodologies used in the analysis of Western music from the Medieval period to the present. Students will learn modern and historical notation, examine rhythm, melody, harmony, counterpoint, texture, and form, and apply analytical techniques to a wide range of repertoire. The course culminates in integrative analyses that combine multiple theoretical perspectives.
ARTH 3261	Asian Art and Architecture	3	This course provides a comprehensive exploration of the art and architecture of Asia, tracing its development from ancient civilizations to the modern era. Students will study both monumental structures and portable art objects, with a focus on a wide array of media such as painting, ceramics, textiles, and photography. In addition to architectural landmarks, the course emphasizes how different artistic traditions within Asia have interacted with one another and with global influences. By examining the diversity and evolution of these forms, students will gain a deeper understanding of the dynamic and interconnected cultural exchanges that shape Asian art, challenging traditional notions of what constitutes "Asian art."
ARTH 3701	Music History	3	This course explores the rich tapestry of European music from the Middle Ages to the present. Delve into the evolution of musical styles, key composers, and the cultural contexts that shaped the sounds of these era. This course offers a fascinating journey through the evolution of musical styles, composers, and cultural influences that have shaped Western music over several centuries.
BCHM 2356	Introduction to Biochemistry	4	This course offers a comprehensive introduction to the fundamental knowledge of biochemistry and molecular biology, the study of the chemical processes taking place within living organisms. In the course, students will study the chemistry and biological properties of proteins, carbohydrates, lipids, and nucleic acids, amino acids, vitamins and learn chemical events in living systems, including metabolism and structure-function relationships of biologically important molecules. Upon completion of this course, students will have a deepened comprehension of the chemical mechanisms that underlie life processes and establish a strong foundation for future studies in the field of biochemistry.
BCHM 4550	Human Nutrition	3	This course is a comprehensive exploration of human nutrition, covering the biological and chemical aspects of nutrients and their impact on human physiology. Topics covered include normal nutrition across the various stages of the life cycle, nutrition in sports, weight management strategies, and the consequences of inadequate nutrition on health.
BIOL 1127	Ecology and Biodiversity	4	Explores the diversity of life on Earth through the lens of ecology and evolutionary biology, emphasizing patterns and processes that generate and maintain biodiversity. Students investigate how organisms interact with each other and their environment, how phylogenetic relationships inform our understanding of life's history, and how biodiversity is measured, conserved, and restored. The course combines ecological theory with applied conservation and systematics, using the tree of life as a framework for understanding biological relationships and lineage divergence.
BIOL 1245	Exploration to General Biology II	4	This course is the second part of a comprehensive introduction to biological sciences, focusing on the diversity of life, ecology, and physiology. It explores the fundamental principles governing organisms, their interactions with the environment, and their evolutionary history. The course examines the structure and function of plants and animals, ecological dynamics, and the impact of human activities on biodiversity and ecosystems. Students will develop analytical and critical thinking skills through lectures, discussions, and laboratory activities, preparing them for advanced studies in biological sciences.
BIOL 3889	Molecular Cell Biology	4	This course explores the structure and function of cells as the basic units of life and examines how macromolecules contribute to cellular processes. Topics include cell organization, metabolism, gene expression, membrane dynamics, energy production, cell signaling, and genetic regulation. The course emphasizes key biological principles that apply across all forms of life, providing a foundational understanding of cellular and molecular biology.

BIOL 4020	Advanced Cell Biology	4	This course is designed to provide a comprehensive exploration of cellular processes, molecular mechanisms, and dynamic interactions within eukaryotic animal cells. Throughout the curriculum, students will explore cell structure, membrane dynamics, intracellular compartments, protein sorting, vesicular traffic, cell communication, cytoskeletal organization, and the molecular events governing the cell cycle, apoptosis, and cancer.
BUSI 1002	Introduction to Business	3	A foundational understanding of business is essential for professionals in the creative industries. This course introduces students to the principles and practices that shape modern business operations, with emphasis on entrepreneurship, management, finance, marketing, and global dynamics. Students explore how businesses function within economic, social, and technological contexts while examining ethical and sustainable approaches to decision-making. Through case studies and real-world applications, the course connects core business concepts — such as accounting, human resources, intellectual property, and branding—to creative and cultural enterprises.
BUSI 2240	Business Technology Applications	3	This course designed to equip students with essential technological proficiency in various applications relevant to modern business environments. Through hands-on practice and theoretical understanding, students will develop skills in word processing, spreadsheets, databases, presentations, communications, Internet use, ethics, and careers using technology applications. The course will incorporate simulations and projects to foster teamwork, leadership, and workplace skills, thereby preparing students for success in today's digital business landscape.
BUSI 2400	Entrepreneurship and Innovation	3	This course introduces the foundations of innovation and entrepreneurship, integrating economic and strategic perspectives to explore how new ideas are generated, developed, and transformed into successful ventures. Students will learn the theory and practice of entrepreneurship, with emphasis on the role of innovation, creativity, industrial organization, intellectual property, and networks in shaping competitive advantage. Through lectures, case studies, and applied projects, students will develop the knowledge and skills to evaluate entrepreneurial opportunities, design innovative business models, and understand the broader economic and social contexts of entrepreneurship.
BUSI 3037	Introduction to International Business	3	This course examines the global forces that shape international business activity and influence how nations, institutions, and markets interact. Students explore the social and economic effects of globalization, considering how geography, culture, governance, and resource distribution affect participation in the world economy. Emphasis is placed on understanding disparities in development and the varying impacts of global integration, including issues such as human rights, labor conditions, access to education, and trade policy. The course provides a broad analytical foundation for evaluating opportunities and challenges in the global business environment.
BUSI 3220	Business, Government and Society	3	It focuses on how economic, political, and social factors shape the business environment and international trade policies. The course emphasizes the grand scale of management and responsibility, where decisions have far-reaching effects on both business and society. This course also focus on policies that affect millions of people and often have implications for every firm doing business globally.
BUSI 4860	Entrepreneurial Strategy	3	This course provides an overview of entrepreneurial strategy, small-business development, and the policy environment in which entrepreneurs operate. With a focus on both traditional small businesses and mission-driven ventures, students analyze how entrepreneurs recognize opportunities, validate problems, develop value propositions, build teams, design organizational structures, and scale emerging enterprises. The course emphasizes case analysis, stakeholder mapping, and systems thinking to help students understand the complex landscape new ventures must navigate.
CHEM 1725	General Chemistry Laboratory I	1	General Chemistry Laboratory I is a foundational laboratory course designed to accompany the concepts taught in General Chemistry I. This course introduces students to essential experimental techniques in chemistry, including proper laboratory procedures, data collection and analysis, and scientific reporting. Students will gain hands-on experience with chemical reactions, stoichiometry, solution preparation, titration, calorimetry, and gas laws. The course fosters scientific inquiry through observation, hypothesis testing, and the interpretation of experimental results.
CHEM 2055	Introductory Inorganic Chemistry	4	This course introduces the fundamental principles, theories, and applications of inorganic chemistry. Topics covered include the periodic table, chemical bonding, coordination chemistry, main group and transition metal chemistry, solid-state chemistry, and the behavior of inorganic compounds. The course emphasizes the foundational knowledge necessary for understanding the properties and reactivity of inorganic substances. (Laboratory)
CHEM 2310	Organic Chemistry I	4	Organic Chemistry I serves as an introduction to the foundational principles of organic chemistry. The course focuses on the structures, properties, and chemical reactivity of carbon atoms in different hybridization states, particularly in alkanes (including cycloalkanes), alkenes, and alkynes. Additionally, various aspects of isomerism in organic compounds and reaction mechanisms (substitution, elimination, and addition) will be covered with an emphasis on electron flow.

CHEM 2320	Organic Chemistry II	4	Organic Chemistry II is the continuation of Organic Chemistry I, focusing on advanced topics in organic chemistry. The course delves into the structure and reactivity of organometallic compounds, radicals, aldehydes, ketones, carboxylic acids and their derivatives, enolates, aromatic systems, amines, heterocyclic compounds, and modern methods and techniques in organic structure elucidation.
CHEM 2510	Analytical Chemistry	4	Analytical chemistry is a measurement science consisting of a set of powerful ideas and methods that are useful in all fields of science and medicine. The course teaches basic theory and knowledge of analtical chemistry. The course to be covered include instrumental methods of analysis, theorem of acid-base and redox titrations as well as the principles of buffer solution and precipitation equilibria, etc. The laboratory of this course will teach students skills in dealing with substances and apparatus in quantitative methods. In this course, you should make chemical measurements yourself and you also need to understand analytical results reported by others.
CHEM 3500	Fundamentals of Thermodynamics	4	Thermodynamics is one of the most basic of physical sciences and almost defines the field of Mechanical Engineering. Topics include properties of a simple pure compressible substance, equations of state, the first law of thermodynamics, the second law of thermodynamics, internal energy, specific heats, entropy, and the application of the first law to a system or a control volume. Additionally, the course covers free energies, enthalpy, chemical potential, and the relationships between these quantities in various thermodynamic processes, including phase transformations and equilibrium states. After the completion of this course, students will able to understand basic concepts, laws of thermodynamics and heat transfer and their applications as well.
CHEM 4400	Environmental Chemistry	4	This course introduces the chemistry underlying major environmental processes and problems affecting the atmosphere, hydrosphere, lithosphere, and biosphere. Students will examine the chemical mechanisms behind air and water pollution, climate change, toxic substances, energy production, and waste management. Through lectures, real-world case studies, and laboratory experiments, students will develop the ability to analyze environmental data, evaluate environmental risks, and explore sustainable technological solutions.
COMM 1080	Introduction to Public Speaking	3	This course is designed to develop students' skills in public speaking and to provide a comprehensive overview of the theories and practices that underlie effective communication. The content will be covered include: theory, practice, analysis, and ethics of public speaking. Students will learn how to analyze their audience and tailor their messages accordingly, how to organize their thoughts effectively, and how to do rhetorical choice and use various delivery techniques to engage and persuade their listeners.
COMM 1100	Introduction to Media Studies	3	Introduction to Media Studies is designed to provide students with a comprehensive understanding of the role, function, and impact of media in contemporary society. The course explores various forms of media, including print, broadcast, digital, and social media, and analyzes their influence on culture, politics, economics, and everyday life. Through theoretical frameworks, case studies, and hands-on projects, students will develop critical thinking skills and media literacy essential for navigating the complex media landscape.
COMM 2200	Theory of Communication	3	This course is designed to explore the fundamental principles and theoretical frameworks of communication across various contexts. It aims to equip students with the knowledge and skills necessary to navigate diverse communication situations in both personal and professional settings. Students will examine key communication models, the role of verbal and nonverbal communication, the dynamics of interpersonal and group interactions, and the influence of media, culture, and technology on communication processes. Special emphasis will be placed on how communication theories apply to organizational settings, public discourse, and cross-cultural interactions. Through critical analysis and practical applications, students will develop a deeper understanding of how communication shapes human interactions and societal structures, enabling them to analyze and enhance their communication styles for more effective collaboration in different social and work environments.
COMM 2600	Immersion：Brain, Mind, and Media	3	This course explores immersion as a cognitive, psychological, technological, and cultural phenomenon. Students examine how humans perceive and construct reality, how stories shape attention and memory, and how interactive technologies (VR, AR, games, haptics, AI agents) produce compelling immersive experiences.
COMM 2700	Argumentation and Debate	4	This course introduces students to the theory and practice of argumentation and debate as tools for critical thinking, public reasoning, and informed decision-making. Students learn how arguments are constructed, analyzed, challenged, and defended across academic, civic, and professional contexts. Classroom debates, structured exercises, and analytical writing help students strengthen their reasoning, communication, and evaluative skills.
COMM 3266	Public Relations	3	Advanced public relations course covers strategic principles, crisis communication, media relations, and ethics. Emphasis on critical thinking and practical exercises prepares students for real-world challenges, refining skills in media relations, image management, and ethical decision-making. Graduates excel as skilled practitioners in diverse corporate settings.

COMM 3703	Nonverbal Communication	4	This course explores the integral role of nonverbal communication within the broader human communication system. It examines the various types of nonverbal cues—such as facial expressions, gestures, and posture—that are key to conveying emotions, regulating interactions, and facilitating social coordination. The course emphasizes the functions these cues serve, including emotional expression, relationship management, deception, and interaction dynamics. Additionally, students will investigate how nonverbal communication works alongside verbal language in both everyday and cross-cultural contexts.
COMM 3801	Asia-Pacific Media	3	This course explores the dynamic and rapidly evolving media landscapes in the Asia-Pacific region, focusing on how global, regional, and local forces interact to shape media practices, cultures, and identities. Drawing from the key themes in Asia: Cultural Politics in the Global Age by David Birch, Tony Schirato, and Sanjay Srivastava, the course will critically engage with concepts such as modernity, postcoloniality, globalization, and the information age. Through interdisciplinary readings and discussions, students will gain a nuanced understanding of the media's role in shaping regional identities, the public sphere, and socio-cultural dynamics. The course will emphasize the challenges and opportunities presented by globalization, technological advancements, and the interconnectedness of the Asia-Pacific media sphere.
COMM 3927	Modern Political Communications	4	This course delves into the intricate interplay between media and politics, both domestically and internationally. It scrutinizes the evolving landscape of information dissemination and its impact on political figures and institutions. The course scrutinizes the concept of information as a source of power and delves into the ongoing tension between media entities and governmental bodies. Key topics include the significance of televised debates, the mechanics of political campaigns, and the dynamics of political conventions as orchestrated events. Additionally, it explores the notion of mediated realities, wherein media narratives shape public perceptions of political events.
COMM 4018	Media Effects	3	This course provides an advanced exploration of media effects, drawing on theoretical frameworks and empirical research to examine how media messages and technologies influence individuals and society. Students will critically analyze major theories such as cultivation, framing, priming, uses and gratifications, and social cognitive theory. The course also investigates media's impact on politics, health, marketing, identity, and emerging technologies, while considering both short-term and long-term effects. By the end of the course, students will develop the ability to evaluate, compare, and apply theories of media effects to contemporary issues in communication research.
COMM 4360	Mass Communication and Public Opinion	4	This course examines how mass media and communication shape public opinion, influence political behavior, and interact with institutions, campaigns, and collective action. Students will explore theoretical frameworks, empirical research, and real-world case studies across democratic and non-democratic contexts. Special attention will be given to media effects, polarization, misinformation, foreign policy communication, social movements, and emerging digital technologies. By the end of the course, students will be equipped to critically analyze how opinions are formed, expressed, measured, and mobilized in society.
COMM 4370	Media Technologies, Institutions, and Policy	3	This course examines the evolution of major media technologies — from print to photography, telegraphy, telephony, radio, and television — and their profound impact on society, culture, politics, and institutions. Students will study how governments and industries responded to emerging technologies through laws, regulations, and policies. The course integrates historical analysis with contemporary debates about media power, democracy, and institutional change, preparing students to understand modern media systems through a long-term technological and policy lens.
COMP 1001	Information Technologies	3	Information Technologies explores the essential concepts and applications of modern computing systems and digital tools that support both individual productivity and organizational operations. The course emphasizes practical skills in using personal software tools such as spreadsheets and image editors, understanding fundamental programming techniques, and developing websites. It also investigates broader technology themes, including computer hardware and software architecture, database management, computer networks, e-commerce systems, and cybersecurity principles such as cryptography and secure communication. By combining foundational knowledge with hands-on practice, students gain a comprehensive understanding of how information technologies shape contemporary life and business.

COMP 1101	Structured Programming Essentials	3	This course introduces the fundamentals of software development and the principles and techniques of structured programming. It also covers the basics of algorithm design, control structures, and modular programming, with a primary focus on data structures, object-oriented programming, an introduction to software engineering, an understanding of the imperative programming paradigm, the foundation of software engineering, including the major development paradigms. The course includes a more in-depth treatment of data structures, providing concrete implementations of abstract library collection types. By the end of the course, students will apply object-oriented programming languages and apply basic programming concepts to solve substantive problems.
COMP 1111	Programming for Data Science	3	Embark on a comprehensive journey into the realm of programming and data science with this introductory course. Delve into Python, a powerful language ideal for beginners, as you explore core concepts like data types, control flows, and functions. Extend your skills into data analysis, utilizing packages such as Pandas and Matplotlib to visualize and interpret data effectively. By the end, you'll possess a solid foundation to approach and solve real-world problems using computational methods.
COMP 1170	Computer Laboratory	1	This introductory course provides students with fundamental knowledge of computer hardware, networking, and programming. Designed for beginners, it combines basic computer concepts with practical skills in network configuration and simple program writing. Students will also learn essential computer applications, including word processing, spreadsheets, databases, email, and internet use. Emphasis is placed on developing confidence in using personal computers independently and understanding computing ethics and resources.
COMP 1305	Computer Programming in Python	3	This course will use Python as our primary programming language and compare it to the structures in other high-level programs. It surveys fundamental concepts in computer programming and data science, including data types, functions, modules, classes, and methods. Additionally, it goes deeper into the testing and debugging of a program. Students are required to write and run basic programs.
COMP 2036	Object Oriented Programming	3	This course serves as an introduction to the fundamentals of programming using the Java programming language. Students will learn the basics of algorithmic thinking, problem-solving, and the principles of object-oriented programming (OOP). The course will cover essential programming concepts, syntax, and techniques, empowering students to write well-structuredand efficient Java code. Students will gain practical experience applying their programming knowledge to real-world scenarios.
COMP 2050	Introduction to Computer Science	4	This course serves as a general introduction to computer science, aimed at dispelling the mystery surrounding computers. The computer is presented as a versatile tool capable of solving a wide range of problems. On one level this course teaches students programming concepts, in particular, binary logic and algorithmic problem solving. On another level this course uses programming as a means to an end, focusing on understanding the fundamental problems within computer science, such as looping, searching, sorting, and data structure.
COMP 2112	Data Structures and Algorithms	3	In this course, students engage with advanced programming by exploring the synergy between data structures and programming language features. The course emphasizes the design of large-scale software systems, focusing on object-oriented programming, data abstraction, polymorphism, and higher-order functions. Through a blend of theory and practical applications, students gain proficiency in crafting flexible, efficient, and scalable code structures. The course empowers participants to navigate complex programming challenges and contribute effectively to the development of sophisticated software systems.
COMP 2950	Computational Modeling	4	This course provides an introduction to computational modeling, focusing on the development and application of computational techniques to solve real-world problems. Students will learn fundamental concepts in algorithm design, data manipulation, and numerical methods, and will apply these skills to build and analyze computational models. The course emphasizes hands-on learning through programming assignments and projects, allowing students to gain practical experience in implementing and testing computational models. Topics covered include data visualization, model validation, and the use of computational tools for scientific and engineering applications. By the end of the course, students will have a solid foundation in computational modeling and will be able to apply these skills to a variety of interdisciplinary problems.
COMP 3120	Operating Systems	3	This course provides a comprehensive introduction to the fundamental concepts, theories, and design principles of operating systems. Topics covered include operating system structures, process management, memory management, synchronization, deadlocks, file systems, CPU scheduling, and virtual memory. Students will explore both theoretical underpinnings and practical implementations of operating systems, as well as concepts related to protection and security, distributed systems, and real-time operating systems. By the end of the course, students will have a solid understanding of how operating systems function, manage hardware resources, and ensure system stability and security in a multi-user environment.

COMP 3125	Software Engineering	3	This course provides an in-depth exploration of both object-oriented and traditional software engineering methodologies, building upon the foundational analysis and design concepts previously introduced. It encompasses a comprehensive study of the entire software development lifecycle, from requirements gathering and system design to implementation, testing, and maintenance. The curriculum places significant emphasis on object-oriented principles and the application of the Unified Modeling Language (UML) to model and document software systems. Key topics include the fundamentals of software engineering, such as requirements engineering, software design patterns, system architecture, and quality assurance. The course also covers essential aspects of project management, including planning, scheduling, and risk assessment, to equip students with practical skills for real-world software development projects. Through a combination of lectures, hands-on projects, and case studies, students will gain a thorough understanding of modern software engineering practices and the ability to apply them in diverse development environments.
COMP 3350	Computer Systems Integration	3	This course provides an in-depth exploration of the fundamental components that constitute computer systems, starting from the foundational level of digital logic and hardware gates and extending to the complexities of compilers, programming languages, and software applications. The primary objective of this course is to offer students a comprehensive understanding of the hierarchical structure of computer systems and to demonstrate how the implementation of straightforward interfaces can facilitate the creation of sophisticated and robust computing solutions.
COMP 3410	Computer Organization	3	This course introduces the principles of computer organization and the hardware and software interface. Students will learn the fundamental abstractions of computer systems, instruction set architectures, data path and control design, memory hierarchy, and parallel processing. Emphasis is placed on both theory and practice, with assignments in performance analysis, assembly programming, simulation, and processor design.
COMP 4012	Computer Networking	3	This course provides a comprehensive introduction to computer networking concepts, architectures, protocols, and technologies. Students will explore both theoretical foundations and practical implementations spanning from physical transmission to security and application-layer services. The course follows a layered approach aligned with major reference models such as OSI and TCP/IP.
COMP 4100	Programming Language Fundamentals	3	This course offers an overview of general features of programming languages and explanation of basic methods of language implementation. Design and programming of particular parts of compilers are supported by elements of the theory of grammars and automata. Students will learn programming language syntax, parsing, semantics, and type systems, and apply these concepts using languages like Scheme, ML, or Haskell. The course covers control flow, data abstraction, polymorphism, concurrency, and optimization techniques to prepare students for building efficient, maintainable software. By the end of the course, students will be able to design and implement advanced programs while understanding the underlying principles that guide programming language design and execution.
COMP 4250	Introduction to Quantum Computing	3	This course provides a comprehensive introduction to the field of quantum computing, exploring its theoretical foundations, practical applications, and future potential. Students will gain an understanding of quantum bits, quantum gates, and quantum algorithms, as well as the differences between classical and quantum computation. Topics covers measurement and superpositions, the no-cloning principle, and quantum teleportation. Students will also discuss the current state and future prospects of quantum computing technology.
COMP 4310	Bioinformatics and Computational Biology	3	This course provides a comprehensive introduction to bioinformatics and computational biology, integrating biological sequence analysis with algorithmic thinking and practical software development. Students will study fundamental concepts in DNA, RNA, and protein sequence analysis alongside classical bioinformatics algorithms for alignment, motif discovery, and genome analysis. Emphasis is placed on hands-on computational skills, including programming in Python and Perl, database management with MySQL, and system-level work in a Linux (Ubuntu) environment. Students will gain experience using major bioinformatics tools and resources such as BLAST, genome browsers, and biological databases, and will design computational workflows and web-based systems to address real biological questions.
ECON 1010	Principles of Economics	3	This course provides an introduction to the fundamental concepts and analytical tools of economics. Students will explore how individuals, firms, and governments make decisions under conditions of scarcity, and how these decisions interact in markets to determine prices, production, and income distribution. The course covers both microeconomics (behavior of consumers and firms) and macroeconomics (aggregate economic performance, inflation, unemployment, and economic growth).

ECON 1080	Introduction to Macroeconomics	3	This course provides students with a comprehensive understanding of the principles, concepts, and analytical tools that govern the study of the broader economic system. Topics contain the components of aggregate demand, national income determination and multiplier theory, business cycles and more. Through a blend of theoretical exploration, real-world applications, and critical thinking exercises, this course offers a solid introduction to the macroeconomic factors that shape national economies and impact global markets.
ECON 2043	Macroeconomic Theory	3	This course is an advanced course that builds upon the foundational concepts introduced in Macroeconomic Theory I, delving deeper into the analysis of macroeconomic phenomena, exploring the dynamics of aggregate economic variables. Topics include national income, employment, the rate of interest, the price level and more. The course is designed for students with a solid understanding of basic macroeconomic principles who wish to gain a more comprehensive and nuanced understanding of macroeconomic theory and its applications.
ECON 2044	Microeconomic Theory I	3	A concentration on microeconomic theory. Modules contain theory of consumer choice;elements of production and cost. Price and output determination in competitive markets will bediscussed in the topics. This course serves as a crucial foundation for further studies ineconomics and related fields. Students will gain insights into the microeconomic forces thatshape the behavior of consumers, firms, and markets.
ECON 2104	Intermediate Microeconomics I	3	This course offers an in-depth analysis of key concepts and models used to understand the behavior of consumers, firms, and markets. This course will explore core areas of microeconomic theory, including economic methodology, consumer theory, the theory of the firm, competitive markets, and efficiency. Emphasis will be placed on understanding how these theories apply to real-world economic policies and decision-making processes. Students will gain insight into how microeconomic principles influence public policy decisions, focusing on how market structures and behavior shape economic outcomes and the role of government intervention.
ECON 2134	Probability and Statistics for Economists	3	This course introduces the fundamental statistics concepts. Probability and statistical concepts play an important role in the economic analysis and applications. The emphasis is on using statistical methods to make economic decisions. Key topics include descriptive statistics, random variables and probability, point and interval estimation, sampling distributions, hypothesis testing. Students will learn the principles of collecting, organizing, and summarizing economic data.
ECON 2135	Econometrics I	3	This course introduces students to the fundamental concepts, principles, and methodologies used in econometric analysis. Key topics will be covered include simple regression model, regression analysis, omitted variable bias, ordinary least squares, heteroskedasticity, dummy variables, panel data methods, instrumental variables estimation, hypothesis testing in the linear regression model, etc. By the end of the course, students will have gained practical skills in econometric analysis and be equipped to conduct empirical research in economics.
ECON 2136	Public Finance	3	This course provides a comprehensive exploration of public finance, focusing on understanding and evaluating tax policies and their implications for economic outcomes and social welfare. Students will examine the rationale behind government intervention, the design and reform of tax and expenditure policies, and their implications for economic efficiency. Students are encouraged to actively participate in discussions, critically analyze tax policy issues, and develop innovative solutions to address contemporary challenges in public finance.
ECON 2210	Environmental and Natural Resources Economics	3	The course explores the economic principles and concepts related to environmental and natural resources. Throughout the course, students will examine the relationship between economic activities, resource utilization, and their impact on the environment. Key topics will be covered include such as pollution, renewable and non-renewable resources, fisheries and forests, externalities and environmental policy, measuring the benefits and costs of environmental improvements, sustainable development, population growth, energy use, and climate change, etc.
ECON 3051	Econometrics	3	This course introduces students to the fundamental concepts and techniques of econometrics, focusing on economic applications of statistical methods. Students will learn how to use simple and multiple regression analysis to analyze economic relationships, test hypotheses, and make economic predictions. By the end of the course, students will be able to critically evaluate economic models and apply econometric techniques to real-world economic problems.
ECON 3340	Behavioral Psychology and Economics	3	Combining insights from psychology on human behavior, this course is intended to allow students to become familiar with the behavioral approach to economics and to political decision making. Students will gain in-depth understanding of the major aspects of economic behavior under certainty and uncertainty. Topics include heuristics and biases, prospect theory, bounded rationality, intertemporal choice, deviations from the standard classical models, and social preferences.
ECON 3510	Economics of Less Developed Countries	4	This course examines the economic conditions, challenges, and opportunities in less-developed regions. It explores the factors contributing to underdevelopment, the role of government and international institutions, and strategies for sustainable economic growth and poverty alleviation. Students will develop analytical skills to evaluate development issues and propose evidence-based solutions.

ECON 3680	Engineering Economics	3	Engineering Economics provides students with essential economic decision-making techniques used in engineering applications. The course focuses on analyzing financial and economic feasibility of engineering projects, integrating concepts such as time value of money, cost-benefit analysis, risk assessment, and decision-making under constraints. Students will apply engineering economic principles to real-world scenarios, evaluating alternative solutions based on financial viability and strategic considerations.
ECON 4101	Applied Game Theory	3	Game theory is a mathematical framework that explores the strategic interactions between rational decision-makers and is widely used in economics, political science, biology, computer science, and many other fields. This course bridges the gap between theory and real-world decision-making by examining the strategic aspects of situations where multiple parties makechoices that impact each other. In this course, students will learn how to model and analyze strategic interactions, including competitive, cooperative, and mixed strategies.
ECON 4116	Managerial Economics	3	This course examines how economic theory and quantitative tools can be applied to real-world managerial decision making. Emphasis is placed on demand analysis, production and cost relationships, market structures, strategic behavior, pricing decisions, and the management of risk and uncertainty. The course integrates microeconomic theory, business strategy, and statistical reasoning to equip students with practical frameworks for making informed decisions in competitive and uncertain environments.
ECON 4225	Public Economics and Fiscal Policy	3	This course provides an analytical examination of the economics of the public sector, focusing on equity and efficiency as primary criteria for public decision-making. It encompasses a study of public choice theory, expenditure theory, public goods, externalities, public provision of private goods, theory of taxation including tax incidence and tax neutrality, principles of fiscal policy, economic stabilization, government borrowing, and federal-provincial fiscal relationships. The course emphasizes technical proficiency and covers core topics in public economics, incorporating both classical and frontier research through theoretical models and empirical analysis.
ECON 4605	Applied Econometrics	3	This course provides a comprehensive introduction to econometrics, focusing on practical application and empirical analysis. Students will learn to construct, estimate, and interpret regression models using real-world data, emphasizing evidence-based insights. Topics include model estimation, hypothesis testing, diagnostic testing, and case studies to reinforce data-driven economic reasoning.
ENGL 1130	Introduction to Native American Literature	3	This course analyzes Native American history, written works and oral traditions. Students will read chronicles and commentaries on published texts, narratives, oratorical and prophetic tribal epics. Students will become deeply familiar with the rich tradition and wide variety of literature by Native American peoples – learning a bit about indigenous cultures, histories, identities, thought, issues, concerns,and strategies over time, and in an ever-changing world.
ENGL 1140	College Writing	3	The College Writing is designed to introduce students to various writing genres and help them develop effective communication skills through written expression. The course will focus on the writing process, emphasizing key aspects of academic writing and expository prose. Students will engage in both creative and analytical writing tasks, developing their abilities in crafting clear, coherent, and well-organized texts. Topics covered will include sentence-level issues, paragraph structure, rhetorical strategies, organization, style, and form. By the end of the course, students will be equipped with the skills needed to write effectively in academic and professional settings.
ENGL 1141	Writing Workshop	1	This course offers an immersive introduction to creative writing in a collaborative workshop setting. Students will develop their skills in crafting character-centered stories, poetry, and prose through imaginative exercises, readings, and group discussions. Emphasis is placed on experimentation, constructive critique, and nurturing each writer's unique voice.Students will explore diverse genres and perspectives while refining their ability to write and evaluate creative work. By the end of the course, each student will produce a portfolio of polished pieces and may share their work in a final public reading or submission opportunity.
ENGL 1500	Selected Topics in Literature	3	This course is designed to enhance students' critical reading skills and cultivate their abilities in coherent discourse through the exploration of selected topics in literature and composition. Emphasizing the proper use and acknowledgment of sources, students will engage in discussions and complete written assignments based on readings from various genres. The course aims to develop analytical thinking, writing proficiency, and a deeper appreciation for literature.
ENGL 2120	Introduction to Literature	3	This course is focused on building your reading, writing, and research skills through the study of fiction, poetry, and drama. Students will learn to interpret and discuss literary texts, develop arguments, and practice clear, effective composition across analytical and creative forms.

ENGL 2650	Digital Writing and Social Media	3	This advanced writing course examines how digital rhetoric shapes public discourse, identityperformance, and social activism in contemporary media. Drawing on case studies of hashtag movements, algorithmic surveillance, and online self-presentation, students will analyze how digital platforms transform communication. Through research-informed projects, participants will create multimodal content that engages with issues of knowledge equity, community formation, and digital authority. The course emphasizes both critical analysis of digital genresand the development of ethical, effective communication strategies for diverse online audiences.
ENGL 3058	Rhetoric and Writing Mastery	3	This course introduces students to the foundations, historical development, and contemporary applications of rhetorical theory. Beginning with the origins of rhetoric in classical antiquity, students will explore how rhetorical traditions evolved through the Middle Ages, the Renaissance, and into the modern era. Particular attention will be given to how rhetorical theory has been shaped by philosophical, political, and cultural contexts, as well as how it continues to inform communication, persuasion, and public discourse today. Through critical readings, comparative analyses, and applied assignments, students will develop a deep understanding of rhetoric as both an art and a field of inquiry.
ERTH 1200	Introduction to Earth Sciences	3	This course introduces students to the fundamental principles of Earth science and provides the essential knowledge to understand how our planet functions as an interconnected system. Through exploring Earth's materials, processes, and history, students will develop scientific literacy about the planet's structure and dynamics, as well as humanity's dependence on and impact upon Earth systems. Students will learn to think like geoscientists by integrating spatial, temporal, and systems perspectives to interpret geological phenomena, natural hazards, and resource issues. By systematically examining topics such as rocks, minerals, plate tectonics, geological time, climate, and water systems, learners will be equipped to analyze current environmental challenges and anticipate future Earth-related opportunities.
EXSC 3313	Nutrition and Exercise Science	3	This course explores the scientific and applied principles of nutrition for athletic performance, recovery, and long-term health. Students will analyze the metabolic demands of various sports, evaluate evidence-based dietary strategies, and develop nutrition plans tailored to athletes across training cycles and competitive levels. Students will also delve into the principles of exercise nutrition, learning how to create effective dietary plans to support various types of physical activity, from endurance training to strength and conditioning.
FILM 2100	Introduction to Film Studies	3	This course provides an introduction to the study of film, focusing on the fundamental techniques, vocabulary, and methods of film analysis. Students will explore the aesthetics, forms, styles, and techniques of cinema, learning how to critically engage with film as both an art form and a cultural text. Key areas of study include narrative structure, mise-en-scène, cinematography, editing, sound, and genre theory, along with an examination of influential filmmakers and film movements. Through screenings, discussions, and written assignments, students will develop analytical skills and a deeper understanding of how films convey meaning.
FILM 3460	Nazis in Film	4	This course explores changing representations of Nazis in German film, from the propaganda of the "Third Reich" to postwar cinematic reckonings with guilt, memory, and moral responsibility. It examines how German filmmakers across decades have depicted the longing for strong leadership, pleasure at inflicting pain on enemies, and fear of racial and cultural others. Through close readings of key films, historical contexts, and evolving aesthetic strategies, students will analyze how cinema both shaped and reflected Germany's confrontation with its Nazi past. The course considers film as a site of national self-examination and ideological struggle, tracing the transformation from glorification to condemnation and, more recently, to ironic or revisionist portrayals.
FINC 3500	Corporate Finance	3	Corporate Finance is designed to provide students with a comprehensive understanding of financial principles and techniques relevant to decision-making within corporations. The course covers various topics such as capital budgeting, cost of capital, financial analysis, capital structure, dividend policy, and risk management. Through theoretical concepts and practical applications, students will develop the skills necessary to evaluate financial opportunities and make informed strategic decisions to maximize shareholder value.
FINC 4014	Principles of Financial Planning	3	This course introduces students to the fundamental concepts and practices of personal financial planning. Through a combination of theory, applied tools, and real-world case studies, students learn how to assess personal financial situations, set financial goals, and construct comprehensive financial plans appropriate for upper- and middle-income households. The course covers budgeting and cash flow management, credit and debt management, insurance, investments, retirement and estate planning — emphasizing decision-making, trade-offs, and long-term financial well-being. A business (financial) calculator is required for calculation exercises. By the end of the course, students will be able to craft and evaluate personal financial plans tailored to diverse life situations.

FINC 4114	Behavioral Finance	3	This course explores how psychological biases, heuristics, and cognitive limitations shape financial decision-making, and how these insights can strengthen ethical and client-centered financial planning. Drawing on the principles of behavioral finance and the regulatory expectations for fiduciary conduct, students will analyze how investor behavior diverges from traditional rational models, why such deviations persist, and how financial planners can ethically guide clients toward better outcomes. Emphasis is placed on understanding behavioral tendencies in individuals and markets, evaluating ethical dilemmas that arise in advisory practice, and applying fiduciary standards to real-world financial planning scenarios. By integrating behavioral insights with professional ethics, the course prepares students to deliver more effective, transparent, and regulation-compliant financial advice.
FINC 4212	Consumer Finance	3	This course introduces students to the core principles of personal financial planning and consumer decision-making. Students will learn to manage money effectively, understand the time value of money, evaluate consumer credit, plan for major purchases, and protect themselves using appropriate insurance and risk-management strategies. The course also covers saving and investment fundamentals, tax planning, and long-term financial goal setting. By the end of the course, students will have the practical skills to make informed financial decisions and create a comprehensive personal financial plan.
FREN 2080	Intensive French	3	French Intensive is an advanced-level course designed for students who have successfully completed previous French courses or have reached a strong intermediate proficiency in the language. The course aims to strengthen and expand students' grammatical and communicational abilities while introducing more complex language components. It will emphasize idiomatic language use, helping students engage in meaningful and practical communication in a variety of contexts. In addition to refining their fluency, students will practice listening, speaking, reading, and writing, integrating these skills through engaging, real-world activities.
GEOL 2010	Physical Geology	4	This course provides an introduction to the materials, processes, and history of the Earth. Students explore minerals, rocks, plate tectonics, earthquakes, surface processes, geologic time, and global change. The accompanying laboratory emphasizes hands-on investigation of minerals, rocks, maps, geologic structures, and Earth surface processes.
HIST 1207	The History of Food	3	This course explores the global history of food from prehistory to the present, examining how eating has shaped culture, politics, and everyday life. Students will study the origins of agriculture, the exchange of crops and cuisines through trade and empire, and the ties between food, slavery, and industrialization. Topics include famine, religion, national identity, and modern food crises. Through global and historical perspectives, the course reveals how food connects power, belief, and identity across time and place.
HIST 2002	Twentieth-Century Global History since 1945	3	This course provides a comprehensive examination of the global dynamics and major events that shaped the world during the second half of the twentieth century. The course is divided into three parts, each addressing significant geopolitical, economic, and social changes that shaped the international landscape. Students will engage with specific topics, including the Cold War, the rise of superpowers, emerging nations, regional conflicts, and the impact of global events on the developing world.
HIST 2022	U.S. History Since 1877	3	This course offers a comprehensive exploration of the United States' historical evolution since 1877. It delves into the multifaceted tapestry of American society, with a strong emphasis on the incredible diversity of the American people. Throughout the semester, we will engage in a detailed examination of how an American society comprising numerous cultures and ethnicities has evolved, adapted, and transformed over the past century and a half.
HIST 3119	World War II in World History	3	This course examines World War II as a defining global event and as a continuing subject of historical interpretation and national memory. The course focuses on two major dimensions: first, how different countries remember and reinterpret World War II within their domestic and international contexts; and second, how the war transformed the modern world in areas such as human rights, government–society relations, and the ethical use of science and technology. Students will explore major military, political, social, and ideological developments of the war while also engaging with debates over responsibility, morality, and historical narrative. Various faculty members with different geographical and thematic expertise contribute as guest lecturers throughout the semester to provide comparative and global perspectives
HLTH 4066	Research and Analysis in Nutrition Science	3	This course provides students with a comprehensive foundation in the design, conduct, and analysis of research in Nutrition and Food Science. Drawing on leading texts in the field, students will explore statistical methodologies, experimental designs, data interpretation, and reporting practices. Emphasis is placed on applying statistical principles to real-world nutrition and food science data, with extensive hands-on training using SPSS. By the end of the course, students will be able to critically evaluate research, design rigorous studies, and competently analyze and report data in line with academic and professional standards.

JAPN 3012	Intermediate Japanese Il	3	This course seeks to strengthen students' proficiency in both spoken and written discourse at the intermediate level. Emphasis will be placed on acquiring more advanced intermediate grammar, additional kanji scripts, and improving oral communication skills. Through a combination of classroom instruction, interactive exercises, and practical assignments, students will build upon the foundation established in the previous course and continue the journey toward becoming a more proficient Japanese speaker.
MARK 1300	Introduction to Marketing	3	This course introduces the basic principles of marketing, covering key concepts and processes such as customer relationship management, marketing planning, understanding customers and competitors, developing marketing strategies (segmentation and positioning), and marketing programs (products, pricing, channels, communication). The course will discuss strategic-level marketing concepts and specific analytical methods. Additionally, it will cover topics such as ethical issues in marketing, corporate social responsibility, and the impact of technology on marketing.
MATH 1526	Introduction to Calculus I	4	Calculus I is an introductory course in calculus, designed to provide students with a solid foundation in differential and integral calculus. The course focuses on the fundamental concepts and techniques of calculus and their applications to solve various mathematical problems. This course serves as a prerequisite for higher-level mathematics and science courses.
MATH 1536	Calculus with Analytic Geometry II	3	This is a mathematics course that builds upon the concepts introduced in Calculus I. The course covers integral techniques, ordinary differential equations, conic sections, polar coordinates, vectors, two- and three-dimensional analytic geometry, infinite series, sequences and series, Taylor series, numerical solutions of differential equations using Euler's method, and the convergence of improper integrals. This course aims to provide students with a deeper understanding of calculus and its applications in various mathematical and scientific disciplines.
MATH 2015	Introduction to Calculus II	3	MATH 2015 is the second course in the calculus sequence. It builds upon the concepts covered in MATH 1526 (Calculus I) and delves deeper into integration techniques, applications of integrals, sequences, series, and more. The course aims to develop students' understanding of calculus and its applications in various fields.
MATH 2245	Multivariable Calculus	3	This course extends the principles of calculus from single-variable functions to functions with multiple variables. Topics include vectors, vector-valued functions, Green's Theorem, Stokes' Theorem, and Gauss' Theorem, multivariable functions, partial derivatives, multiple integrals, line integrals, surface integrals, vector fields, and their applications. Additionally, students will explore applications in physics, engineering, and other fields.
MATH 2250	Elementary Real Analysis	3	This course provides a fundamental exploration of real analysis, emphasizing key concepts such as real numbers, sequences, series, infinite sums, sets, basic topology, continuous functions, differentiation, integration, the theorem of calculus, function sequences and series, power series, and metric spaces. Students will develop a strong foundation in the principles of analysis, enabling them to rigorously understand and apply mathematical concepts in various contexts.
MATH 2410	Applied Linear Algebra I	3	This course introduces students to the concepts and skill of linear algebra. At first the topics will focus on linear equations, vector spaces, determinants, orthogonal projections, eigenvalues and eigenvectors, singular value decomposition. At the end it relates to other applications chosen, such as linear programming and duality and the simplex method.
MATH 2849	Elementary Differential Equations and Laplace Transformations	3	This course is designed to provide a comprehensive introduction to the theory and application of Ordinary Differential Equations (ODEs) with a special focus on solving them using the powerful Laplace Transform. Throughout the course, students will engage in hands-on exercises and computational assignments using mathematical software to solve ODEs and apply the Laplace Transform to various problems. Topics include First order equations, Linear differential equations of higher order, Differential operators, Laplace transforms and more.
MATH 2851	Foundations of Stochastic Processes	3	This course provides a foundational understanding of stochastic processes, focusing on key concepts such as Markov chains, random walks, martingales, Galton-Watson trees, branching processes, Poisson processes, point processes, birth and death processes, queuing theory, stationary processes, as well as simulation and inference for stochastic models. Through theoretical study and practical applications, students will develop the necessary tools to analyze and model random phenomena in various fields including mathematics, statistics, engineering, and finance.

MATH 3006	Abstract Algebra	3	This course explores the foundational concepts and structures of abstract algebra, emphasizing integers, sets, groups, and rings. Topics include properties of integers, group theory (with a focus on permutation and cyclic groups), Lagrange's theorem, subgroups, normal subgroups, quotient groups, and the external direct product of groups. Additionally, the course introduces homomorphisms, isomorphisms, rings, and fields. The focus is on understanding these concepts through rigorous proofs and practical applications in mathematics and related fields.
MATH 3010	Regression Analysis	3	Regression Analysis estimates relationships between independent variables and a dependent variable. This course is intended to introduce the basic ideals and models of regression analysis, including its interpretation and implementation in the statistical software package. Topics of simple linear regression, multiple linear regression, least-squares estimation, hypothesis testing, transformations, generalized and weighted least squares, multicollinearity, variable selection and model building, nonlinear regression model will be included.
MATH 3100	Applied Linear Algebra	3	Applied Linear Algebra is a course that focuses on the practical applications of linear algebra. The course builds upon the foundational concepts of linear algebra and explores their real-world relevance and problem-solving techniques. Students will learn the knowledge related to the topics of vector spaces, linear equations, eigenvalue problems, orthogonality, least squares, symmetric matrices and quadratic forms, etc. By the end of the course, students are expected to gain the ability to apply linear algebraic methods and tools to analyze and solve problems in real life.
MATH 3105	Introduction to Number Theory	3	An introduction to the fundamental concepts and techniques of number theory, it covers topics such as divisibility, prime numbers, congruences, Diophantine equations, number-theoretic functions, and modular arithmetic. Special emphasis is placed on both theoretical foundations and practical applications, including cryptography. The course will develop problem-solving skills and explore the historical development of key number theory concepts.
MATH 3371	Numerical Methods Analysis	3	Numerical methods play a crucial role in solving complex mathematical problems that often arise in engineering, science, and various fields. The course provides students with a comprehensive introduction to the fundamental numerical techniques used to approximate and solve mathematical problems. Topics include interpolation and polynomial approximation, numerical differentiation and integration, numerical methods of differential equations, error analysis, the number of conditions for a linear system, linear and nonlinear systems. By the end of the course,students will develop the skills necessary to apply numerical methods effectively. MATLAB software will be uses in this course.
MATH 3420	Modern Abstract Algebra	3	This course delves into the study of groups, rings, and fields, which are fundamental algebraic structures, and investigates their properties, operations, and applications. It offers a deep understanding of algebraic concepts beyond elementary algebra. Students will develop a solid understanding of algebraic systems and their applications in diverse mathematical contexts. Course topics include groups, group homo-morphisms，cyclic groups, cosets, Lagrange's theorem, normal subgroups, introduction to rings, ring homomorphisms and more.
MATH 3520	Discrete Mathematics with Applications	3	The course is structured to serve as an introduction to the realm of discrete mathematics, aiming to familiarize students with prevalent concepts and methodologies within this field. Its purpose is to acquaint students with fundamental ideas and methods from discrete mathematics that hold broad applicability.Topics included in this course will cover logic and proof, set theory, Algorithms, functions, sequences, number theory, cryptography, mathematical induction, counting methods, graph theory applications, combinations, discrete probability, the inclusion/exclusion rule, relations, etc. Students will develop problem-solving skills and mathematical reasoning abilities.
MATH 4200	Fundamentals of Partial Differential Equations	3	This course serves as an essential introduction to the world of Partial Differential Equations (PDEs). PDEs are mathematical tools used to describe and analyze complex physical and scientific phenomena, from heat diffusion to quantum mechanics. This course covers the fundamental principles, techniques, and applications of PDEs, such as maximum principles for elliptic equations and classical solution of the Laplace equation, Green's functions and variational methods, providing students with the knowledge and skills to understand and work with these equations effectively.
MATH 4877	Probability and Statistics	3	Understanding uncertainty and making informed decisions require a solid grasp of probability and statistical methods. This course covers the fundamental principles of probability theory and statistical inference, combining theoretical foundations with practical data analysis. Topics include probability axioms, conditional probability, random variables, probability distributions, the Central Limit Theorem, hypothesis testing, and interval estimation. Emphasis is placed on both the mathematical underpinnings and the interpretation of results in real-world contexts. Students will also gain hands-on experience with the statistical computing environment R, enabling them to analyze data effectively and interpret statistical output.

MATH 5525	Optimization in Operations Research	4	Optimization in Operations Research introduces students to the fundamental models and methods used to make the best possible decisions in complex systems. Students study key topics including linear programming, simplex and interior-point methods, duality and sensitivity analysis, network and dynamic programming, integer and discrete optimization, and nonlinear optimization. The course also covers heuristic and metaheuristic methods for solving large or difficult problems where exact solutions are not practical.
MECH 3810	Fluid Mechanics	3	This course introduces the principles of fluid mechanics, emphasizing the study of fluid properties, fluid statics, and dynamics. Topics include the analysis of fluid motion, the application of conservation laws (continuity, momentum, and energy), and the behavior of both viscous and non-viscous flows. Practical applications such as pumps, turbines, flow in pipes, and flow around submerged objects are covered. Dimensional analysis and dynamic similitude are also explored as essential tools for solving real-world fluid mechanics problems.
MGMT 2400	Corporate Strategy and Leadership	3	This course is designed to equip students with the critical skills and strategic thinking necessary for success in dynamic and competitive business environments. It emphasizes the development of leadership capabilities, strategic decision-making, and business mindsets. Through the exploration of frameworks such as Agile, Lean, and Design Thinking, students will enhance their ability to lead teams, foster collaboration, and drive business growth. Core themes include team dynamics, leadership development, negotiation strategies, career progression, and promoting ethical and sustainable business practices. Interactive discussions and practical exercises will empower students to make impactful decisions, advance their careers, and contribute to organizational success.
MUSC 2502	Music Education	3	This course explores the diverse field of music education, focusing on its role in childhood development and educational settings. Students will gain an understanding of the evolution and importance of music education, along with insights into creating effective curricula and instructional strategies. Emphasis is placed on addressing various developmental stages in music learning, fostering creativity and music literacy, and engaging with current trends and practices in music education.
MUSC 2768	Music of the African Diaspora	3	This course examines the musical legacy of the African diaspora, beginning with traditional African music and its transformation through contact with European and Islamic cultures. It follows the emergence of Afro-American musical styles in South and Central America, the Caribbean, and North America, including spirituals, blues, and jazz. The course also explores modern urban popular music in postcolonial Africa and the ongoing global exchange of musical forms.
PHIL 1100	Introduction to Philosophy	3	This course introduces students to philosophical inquiry, facilitating a thorough examination of essential questions that have influenced human thought across history. By critically analyzing fundamental philosophical themes, students will cultivate a profound comprehension of reality, the boundaries and origins of knowledge, the notion of God, and the quest for meaning in human life.
PHIL 1230	Reasoning and Critical Thinking	3	Reasoning and Critical Thinking is a course designed to help students develop the essential skills of logical reasoning and critical thinking. Students will learn how to analyze and evaluate arguments, distinguish between valid and invalid reasoning, and identify common fallacies. The course will cover topics such as deductive and inductive argument, logical structures, evaluation of arguments, and the scientific method, etc. Through readings, discussions, and assignments, students will develop their ability and acquire practical techniques to think critically, communicate effectively, and make sound judgments.
PHIL 1500	The Meaning of Life	4	What makes life meaningful? Is meaning something we create or something we discover? This course examines enduring human questions about happiness, love, suffering, freedom, and mortality. Through readings in philosophy, literature, and film, students explore classical and modern attempts to make sense of existence. The class emphasizes discussion, reflection, and personal engagement with ideas that shape our sense of purpose and value.
PHIL 2520	Social Philosophy	4	This course explores how society is structured and how power operates within it. We will explore how social structures, institutions, and ideologies shape identity, power, freedom, and justice. Topics include how gender and race affect social standing, how class influences political and economic life, and how major philosophical traditions — liberalism, critical social theory, and postmodernism — analyze, justify, or challenge existing social institutions.
PHIL 2912	Introduction to Ethics	3	A critical exploration of the foundations of morality and moral knowledge, this course examines various philosophical perspectives on ethical theory. Students will engage with key normative ethical frameworks such as hedonism, consequentialism, deontological ethics, virtue ethics, and feminist ethics, while also addressing metaethical questions about the nature of morality. The course delves into the challenges posed by ethical pluralism and moral relativism, offering a comprehensive overview of moral philosophy's role in guiding human behavior. Through thoughtful analysis and discussion, students will assess the philosophical arguments behind these ethical theories and explore their real-world applications.

PHYS 1401	Physics for Life Sciences I	4	The primary goal of this course is the presentation of selected principles and topics in physics with applications to the life sciences. Main topics will involve mechanics, work, energy and power, linear momentum and impulse, angular momentum, rotational motion, heat and the first law of thermodynamics. Students in this course are required to have basic knowledge of calculus and analytical methods.
PHYS 1536	Introductory Mechanics	4	This course provides an introduction to the fundamental concepts of mechanics, covering the dynamics of particles and rigid bodies using vectors and calculus. Students will explore topics such as conservation of energy and momentum, as well as kinetic theory. These concepts serve as the cornerstone for understanding various principles in the physical sciences and engineering disciplines.
PHYS 3300	Fundamentals of Thermodynamics	4	Thermodynamics is one of the most basic of physical sciences and almost defines the field of Mechanical Engineering. Topics include properties of a simple pure compressible substance, equations of state, the first law of thermodynamics, the second law of thermodynamics, internal energy, specific heats, entropy, and the application of the first law to a system or a control volume. Additionally, the course covers free energies, enthalpy, chemical potential, and the relationships between these quantities in various thermodynamic processes, including phase transformations and equilibrium states. After the completion of this course, students will able to understand basic concepts, laws of thermodynamics and heat transfer and their applications as well.
PHYS 4111	Computational Physics	4	This course introduces computational approaches essential for exploring and solving contemporary problems in physics. Students will learn how to translate physical systems into numerical form, construct algorithms, and develop working simulations for dynamical, statistical, and quantum-mechanical models. Emphasis is placed on programming for scientific inquiry, numerical algorithms, stability concerns, efficiency, and interpreting results visually. Alongside foundational practices, students engage with modern simulation tools including Monte Carlo methods, molecular dynamics, spectral techniques, and scalable computation.
PHYS 4112	Statistical Thermodynamics and Statistical Mechanics	4	This course provides a rigorous foundation in the principles and methods of statistical thermodynamics and statistical mechanics, linking the microscopic behavior of atoms and molecules to macroscopic thermodynamic observables. Emphasis is placed on both classical and quantum systems, the development of ensemble theory, and the applications of probability in describing equilibrium and non-equilibrium phenomena. Topics include the laws of thermodynamics, entropy and information theory, partition functions, quantum statistics, and phase transitions. The course integrates theoretical formulation with selected applications in condensed matter, astrophysics, and molecular systems.
PHYS 4370	Quantum Mechanics	4	This course offers a rigorous introduction to the foundations and applications of quantum mechanics. Beginning with experimental motivations such as the Stern – Gerlach experiment, students will learn how quantum states are represented mathematically, how they evolve in time, and how measurements affect physical systems. Core topics include quantized energy levels, wave mechanics, angular momentum, and perturbation theory. The course progresses to multi-particle systems, identical particles, symmetries, and modern applications such as quantum tunneling, hyperfine interactions, and periodic potentials relevant to solid-state physics.
POLI 1500	Introduction to American Politics	3	This course provides a comprehensive introduction to the structure, processes, and outcomes of American politics. Students will examine the U.S. Constitution, the organization and powers of the national government, citizen political behavior, and the roles of political parties, interest groups, and the media. Through readings and discussions, students will gain a foundational understanding of how political institutions and actors shape public policy and democratic governance in the United States.
POLI 2793	Environmental Policy	4	Policymaking frameworks for defining environmental problems and crafting solutions; major regulatory strategies, including the Clean Air Act, the Clean Water Act, and the role of the Environmental Protection Agency; approaches to hazardous waste management and ecosystem-based governance, illustrated by cases such as Love Canal and Chesapeake Bay; historical tensions between economic development and environmental protection, involving oil exploration, federal grazing policies, wildlife conservation, and conflicts over recreational land use; emerging environmental challenges, including climate change, renewable energy development, shale gas extraction, urban growth management, and water resource sustainability; and the evolving impact of political values and trade-offs on environmental policy outcomes.
POLI 2980	Foundations of Public Policy	3	This course introduces students to the foundations of public policy, focusing on the political processes, institutional actors, analytical tools, and substantive issue areas that shape contemporary policymaking. Students will learn how policies are formulated, implemented, evaluated, and changed. Through case studies and policy-analysis exercises, students will develop the ability to critically assess public problems and propose evidence-based solutions.
PSYC 1040	Foundations of Psychology	3	This course provides an overview of the foundational concepts, theories, and methods inpsychology. Topics covered include the history of psychology, research methods, biologicalbases of behavior, nervous system, sensation and perception, language, and thought, learning, memory, motivation, emotion, personality, psychological disorders, and therapy.

PSYC 2021	Physiological Psychology	3	This course explores the physiological foundations of behavior, focusing on the structure and function of the nervous system and how it controls behavior. Topics include the basic anatomy of the nervous system, the cellular mechanisms underlying neurotransmission, sensory processes, and cognitive neural functions. We will also examine the biological bases of major psychiatric disorders, with an emphasis on their physiological underpinnings.
PSYC 2040	Introductory Psychology	3	This introductory course offers a comprehensive exploration of the fascinating field of psychology, providing students with a foundational understanding of the mind, behavior, and the scientific principles that underlie psychological research. Through a combination of lectures, readings, discussions, and practical exercises, students will embark on a journey to unravel the complexities of human thought and behavior.
PSYC 2050	Introduction to Child Development	3	This course delves into the multifaceted exploration of child development, integrating foundational theories and cutting-edge research in developmental psychology. It provides a comprehensive examination of various domains, including learning, cognition, perception, personality, and social development in infancy and childhood. Through a blend of theoretical frameworks and empirical studies, students will gain a nuanced understanding of the intricate processes that shape the growth and maturation of children.
PSYC 2095	Social Psychology	3	The course examines how people interact with each other and their social environment. Students will gain an understanding of how social factors shape behavior, thoughts, and emotions, as well as how individuals influence and are influenced by their social context. The course covers a range of topics including social perception, attitudes, behavior, group process, interpersonal relationship and language communication. By the end of the course, students should have a strong grasp of the major principles and theories of social psychology and be able to critically evaluate research in the field.
PSYC 3206	Personality	3	This course will examine the critical theories and research approaches of personality psychology. The emphasis is placed on the classical and frontier personality theories. It will also review how these theories explain people's difference and individuality, as well as their applications in research and assessment. The course is meant to critically analyze the most important concepts/research in the field of personality psychology
PSYC 3250	Human Neuropsychology	4	This course provides a comprehensive overview of human neuropsychology, focusing on the relationship between brain structure, neural systems, and behavior. Students will examine the historical development of neuropsychology, principles of nervous system organization, neural communication, and modern methods for studying brain function. The course integrates biological foundations with cognitive, emotional, and clinical perspectives, emphasizing both typical brain function and disorders affecting the human brain.
PSYC 3252	Introduction to Cognition	3	This course explores the fundamental theories, research, and applications related to cognitive development from infancy through adulthood. Topics include perception, attention, memory, language acquisition, problem-solving, executive function, and the influence of culture and environment on cognitive growth. Emphasis is placed on contemporary research findings and their practical implications for education, parenting, and cognitive enhancement strategies.
PSYC 3500	Drugs and Behavior	3	The study of drugs and behavior explores how psychoactive substances influence the brain, body, and behavior. Emphasizing the principles of behavioral pharmacology, this course examines the biological mechanisms, psychological effects, and social implications of drug use. Students will learn how drugs act on the nervous system, how behavior influences drug effects, and how both pharmacological and environmental factors shape patterns of use, dependence, and addiction. The course integrates research from psychology, neuroscience, and pharmacology to provide a comprehensive understanding of how drugs modify human experience and behavior.
PSYC 3700	Understanding the Self	3	This course explores how individuals construct, experience, and express the self across psychological, social, cultural, and biological dimensions. Students will examine the origins, dynamics, and regulation of self-related processes, including self-awareness, motivation, self-esteem, and identity. Through theoretical readings, empirical research, and reflective writing, the course investigates how the self develops, changes, and adapts within interpersonal and cultural contexts in the modern world.
PSYC 3801	Family Psychology	3	The family is a central influence on human development, behavior, and identity. This course examines the psychological, social, and cultural dimensions of families and intimate relationships in contemporary society. Through theories and empirical research, students explore marriage, partnership, parenting, and family systems across diverse contexts. Topics include changing family structures, communication and conflict, gender and power dynamics, parenting, divorce, resilience, and cross-cultural variations. Emphasis is placed on how psychological processes and social forces interact to shape family functioning and individual well-being.
SOCI 1060	Foundations of Sociology	3	Foundations of Sociology is a comprehensive course designed to provide students with a foundational understanding of the key concepts, theories, and methodologies within the field of sociology. The course aims to develop critical thinking skills and sociological imagination to analyze and interpret social phenomena, structures, and processes. By examining various social institutions, social interaction, and social change, students will gain insights into the complexities of human behavior and social relations.

SOCI 2130	Sustainable Systems	3	This course introduces the concept of sustainable systems and explores a systems-based approach to sustainability. It covers the analysis and design of sustainable agricultural, food, environmental, energy, water, and societal systems. Students will learn how to create products, systems, and services that are socially, environmentally, and economically sustainable. The course emphasizes a multidisciplinary perspective, integrating insights from climate change, materials science, energy, and water management. The goal is to equip students with the knowledge and tools needed to address global sustainability challenges by fostering innovation in sustainable practices.
SOCI 2405	Social Science Research	3	This course delves into research object definition, questionnaire formulation, data interpretation, findings presentation, and problem-solving. Topics will include inquiry, research design, experiment, survey research, qualitative field research, qualitative and quantitative data analysis, statistical analyses, reading and writing social research. Students are supposed to design and implement a small research project to examine their comprehension of social research processes and principles.
SOCI 3011	Technology, Culture, and Society	3	This course investigates the complex and dynamic relationships between technology, culture, and society. It introduces students to key theoretical frameworks that question technological determinism and highlight how technologies are shaped by, and in turn shape, cultural practices, institutions, and power relations. Students will examine how meanings of "technology" and "culture" evolve through historical, political, and social contexts and will explore contemporary debates about emerging technologies such as digital media, artificial intelligence, surveillance systems, and biotechnology. By critically engaging with theories and case studies, students will develop a nuanced understanding of how technology participates in everyday life, identity formation, labor, communication, and social transformation.
SOCI 3777	Gendering Asian America	3	This course examines the cultural politics of gender and sexuality in the making of Asian America through a historical and interdisciplinary lens. Students will trace how migration, exclusion, war, and globalization shaped Asian American identities, communities, and cultural expressions. Particular attention will be paid to how race, gender, and sexuality intersect in the regulation of Asian bodies, the negotiation of kinship and intimacy, the experiences of labor and displacement, and the articulation of resistance and activism. Through historical narratives, feminist and queer critiques, and analysis of literature and media, students will explore how Asian/American encounters illuminate broader struggles for justice, belonging, and citizenship.
SOCI 4815	Social Work Practice With Families	3	Focusing on the family as a dynamic and interconnected system, this course explores theories, practices, and intervention strategies relevant to social work with diverse family structures. It examines family roles, rules, relationships, communication patterns, and the influence of cultural, economic, and psychosocial factors on family functioning. Students will learn to assess family systems and apply evidence-based approaches to support families in managing life challenges, mental health issues, intergenerational conflict, and transitions such as divorce or migration. Emphasis is placed on ethical, culturally sensitive, and strengths-based social work practice with families across the life course.
STAT 1100	Introduction to Statistics	3	This course is an introduction to statistics, focusing on fundamental concepts and techniques for analyzing and interpreting data. Topics covered include descriptive statistics, probability, probability distributions, statistical inferences, and various statistical analyses. Emphasis will be placed on applying statistical concepts to real-world problems and developing critical thinking skills.
STAT 1200	Introductory Probability and Statistics	3	This course serves as a foundational exploration of Probability and Statistics, equipping students with essential tools to understand and analyze uncertainty in various real-world scenarios. The curriculum encompasses key concepts in conditional probability, independence, discrete and continuous random variables, mean and variance, descriptive statistics, and statistical inference.
STAT 2140	Applied Statistics Research	3	The applied statistics course provides students with the fundamental knowledge and practical skills needed to analyze and interpret data. The course introduces students to the practical application of statistical methods in various fields. Topics include residual analysis, contingency tables, analysis of variance, proportionality inference, goodness of fit, tests for normality, two-sample comparisons, regression and correlation, tests for linearity and outliers. Students will develop the ability to apply statistical techniques to solve problems, make predictions, and derive meaningful insights from data. The course provides a solid foundation for those pursuing further studies in statistics, data science, or related fields.
STAT 4202	Mathematical Statistics	3	An advanced course designed to provide a rigorous foundation in mathematical statistics. This course will delve into the core concepts and methods used in statistical inference, including point estimation, interval estimation, and hypothesis testing. Students will learn how to develop and evaluate statistical models, estimate parameters, and make inferences about populations based on sample data. The course emphasizes both theoretical foundations and practical applications, preparing students for further study or work in statistics, data science, and related fields.